

was flown at approximately 500 feet, taking advantage of moderate northeast winds, from Abilene to Guadalupe Pass, with the visibility averaging 2 miles, until reaching Guadalupe Field (20 miles east of Guadalupe Pass) where there was a change within 1 mile from a visibility of 2 miles to 60 miles north, south, and west. Guadalupe Field was reached just at dawn.

Pilot Rockwood, flying the Dallas-Kansas City section of the Dallas-Chicago route, departed from Dallas 11 p.m. with the surface visibility 10 miles, while at an altitude of 500 feet he found it to be less than $1\frac{1}{2}$ miles. The base of the dust was fairly sharp at this elevation. Within 15 minutes he was forced back to Dallas after encountering an unusually heavy wave of dust which he described as a "white wall of something that looked like fog", and was within one-half mile of the Dallas airport before being able to see the lights from a height of 500 feet.

At 4 a.m. the following morning Pilot Rockwood again departed from Dallas in an endeavor to complete his schedule. He pulled up to an altitude of 1,000 feet flying in the dust, which had somewhat diminished, with a visibility of from 2 to 3 miles to Fort Worth. From Fort Worth to the Red River he flew at 800 feet with a visibility of about 2 miles but, after crossing the Red River Valley, it became unlimited within a distance of 3 miles. No definite base of the dust was noticed on this flight.

J. A. Riley points out ² that one distinct type of Texas duststorm is caused by strong winds blowing across the plains of Texas, sometimes attaining gale force, over a wide area and picking up large quantities of dust. This

would account for the duststorm under consideration except for the fact that the color and fineness of the dust, together with good surface visibility, would indicate that all, or practically all, of it originated somewhere to the west of Texas.

G. M. French, of the Weather Bureau Airport Station at Burbank, Calif., states that—

there were two periods previous to the night of the 24th and 25th of March when strong to gale force surface winds occurred in many localities from eastern California to New Mexico including southern Nevada and southern Utah. One period was on the 21st and morning of 22nd and the other, more severe, on the 23rd.

There are a number of places in eastern California, the southern portions of Nevada and Utah, and in Arizona where dry lakes are composed of alkali, and during windy weather a fine white dust is picked up over these dry lakes.

It would seem from the foregoing that this dust was transported aloft by strong to gale force westerly winds after being picked up in small quantities over dry "alkali lakes" in the region between the Sierras and the southern Rockies and, after crossing the Rockies, more alkali was raised, by locally severe surface winds, from New Mexico and, eventually, upon reaching the Llano Estacado of Texas probably a last reinforcement of white alkali was received from the several dry alkali lakes in this area. As this dust was borne aloft into Central and North Texas (over descending topography, which would be a factor in maintaining good surface visibility) it was allowed gradually to descend to the ground with the veering of the surface winds, which, seemingly, grasped it from the overrunning dust-laden westerlies.

² Sandstorms in Texas, MONTHLY WEATHER REVIEW, January 1931, vol. 59, p. 30.

HAZE CONDITION AT NEW ORLEANS, LA., MAY 5-9, 1933

By GEORGE L. CANADAY

[Weather Bureau, New Orleans, La.]

The strange appearance of the sun and moon over New Orleans from May 5 to May 9, 1933, due to an unusually large amount of dust particles in the air, caused a great deal of interest among the residents of that city and resulted in the Weather Bureau answering numerous requests for an explanation of the phenomenon.

The sun, as well as the moon at night, assumed the appearance of a reddish disk. The reflected sunlight was of a mellow, golden color, particularly at dawn and in the late afternoon. Individuals were able to look directly at the rising or sinking sun, without injury to their eyes, the sun gleaming through the haze as a great red ball. At least one person was heard to confuse the setting sun with the moon, commenting on the enlarged appearance of the moon.

The Weather Bureau first observed a light haze over New Orleans during the night of May 5. The haze continued without a break until the night of May 9, varying from light to moderate and at times becoming almost dense. The gathering dust particles intercepted the shorter wave lengths of the sun's light and permitted the longer wave lengths to predominate in reaching the earth's surface, thereby causing the reddish glow of the sun and the golden sunlight.

Table 1, prepared from a typical upper-air map during the haze period, illustrates the strong westerly winds that prevailed. These high winds aloft probably were responsible for the unusual occurrence at New Orleans, having picked up the dust particles from more elevated, arid regions of the southwestern part of the United States and transported them eastward. The haze condition ended almost simultaneously with the shift of winds from a westerly to a more southerly direction.

TABLE 1.—Winds aloft, May 5, 1933

(Direction and velocity (m.p.s.))

Station	Surface	1,000 M.	2,000 M.	3,000 M.
Albuquerque, N. Mex.	NW-2	WSW-4	W-7	-----
El Paso, Tex.	SW-9	W-16	NW-16	W-19
Big Springs, Tex.	S-1	WNW-3	WSW-12	W-20
Brownsville, Tex.	SW-1	SE-9	NW-2	SSW-15
Houston, Tex.	NW-1	WSW-10	WSW-11	W-22
Dallas, Tex.	W-7	WNW-10	WNW-12	W-14
Jackson, Miss.	SW-4	SW-8	W-18	W-29
New Orleans, La.	SE-1	SW-8	NW-18	WSW-29

While cloudiness at New Orleans was somewhat above normal and rainfall deficient, consistent breaks in the clouds permitted a considerable amount of the peculiar sunlight to come through. These circumstances favored closer observance of the haze effects, which were more pronounced in the early morning and late afternoon. Table 2 gives a history of the cloud conditions, rainfall amounts, and sunshine percentages during the existence of the haze over New Orleans.

TABLE 2.—Cloudiness, precipitation, and sunshine at New Orleans

Date	7 a.m.	Noon	7 p.m.	Pre- cipitation	Per- cent sun- shine
May 4	10 St. Cu. SE	9 St. Cu. SE	10 St. Cu. S	T	28
5	Few Cl. St. W	8 A. Cu. SW	Few A. Cu. SW	T	98
6	10 St. E	6 A. St. W	2 A. St. SW	T	47
7	10 Lt. Fog E	4 St. Cu. SE	8 St. Cu. SE		
7	1 A. St. W	10 St. Cu. SW	9 A. St. SW	0	77
7	2 St. Cu. S		1 St. Cu. SW		
8	6 A. St. W	4 A. St. W	10 A. St. SW	0	58
8	4 St. Cu. SW	6 St. Cu. SW			
9	9 A. St. SW	8 A. St. SW	7 A. St. SW	0	80
9	1 Cu. S	2 St. Cu. SW	3 St. Cu. S		
10	2 Cu. S	2 Cu. S	3 A. Cu. S	0	88
			1 Cu. SE		